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EMPIRICAL RESEARCH

The Age–IPV Curve: Changes in the Perpetration of Intimate Partner Violence During Adolescence and Young Adulthood

Wendi L. Johnson · Peggy C. Giordano · Wendy D. Manning · Monica A. Longmore

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Abstract Research on intimate partner violence (IPV) has evolved over the last decade with increasing interest in how IPV develops over adolescence and young adulthood. Studies examining patterns of IPV over time have generally focused on victimization with less attention to temporal shifts in perpetration. While it is generally assumed that IPV peaks during young adulthood, this has not been empirically verified and documented. Additionally, prior longitudinal analyses of IPV have focused on identifying trajectories and their accompanying risk factors, with less attention given to within-individual change in IPV experiences across and within relationships. Drawing on five waves of data from the Toledo Adolescent Relationships Study, we examined patterns of the perpetration of IPV among a diverse sample of adolescents and young adults (51.1 % female, 63.9 % non-Hispanic White, 24.6 % non-Hispanic Black, 11.5 % Hispanic) spanning the ages of 13–28 years (N = 1,164). Analyses demonstrated that IPV patterns deviate from the age–crime curve, with women's involvement in IPV increasing, while their involvement in other antisocial behaviors is decreasing. Traditional behavioral and psychological risk factors (delinquency, alcohol and drug use, depressive symptoms) accounted for some of the age variation in IPV for men, but these factors did not account for age variation in IPV among women. Relationship risk factors including frequency of disagreements, trust, jealousy, validation and self-disclosure, however, accounted for substantial portions of the age–IPV perpetration relationship for male and female youth. These findings reinforce recent calls for prevention efforts that focus on the development and maintenance of healthy relationships.

Keywords Violence · Adolescence · Emerging adulthood · Longitudinal · Gender differences

Introduction

Over the last several decades, intimate partner violence (IPV) has garnered considerable research attention. The resulting body of work has yielded much information regarding risk factors associated with IPV perpetration (Carney et al. 2007; Fang and Corso 2008; White and Chen 2002) and victimization (Cunradi et al. 2002; Halpern et al. 2009). From an initial focus on adults, the field has grown to include attention to the experience of violence within teen relationships (e.g., Giordano et al. 2010; Hamby et al. 2012; Jouriles et al. 2012), and some research has examined the role of teen violence itself as a risk factor for later adult experiences (Cui et al. 2013; Gómez 2011; Halpern et al. 2009). Thus, developments within the field increasingly highlight the utility of a life course perspective. Yet, research has not documented age-related patterns of IPV that span adolescence into young adulthood, and information about temporal changes in IPV perpetration is particularly limited. Data sets such as the National Longitudinal Study of Adolescent Health (Add Health) include detailed reports about victimization experiences, but do not elicit information about the perpetration of IPV at the earlier interviews. It is important to examine IPV perpetration across adolescence and young

W. L. Johnson (✉)
Department of Sociology, Anthropology, Social Work and Criminal Justice, Oakland University, Rochester, MI 48309, USA
e-mail: wljohnson@oakland.edu

P. C. Giordano · W. D. Manning · M. A. Longmore
Department of Sociology, Center for Family and Demographic Research, Bowling Green State University, Bowling Green, OH 43403, USA

adulthood, when risk may be at its peak. Researchers have identified a range of behaviors that fall under the umbrella of IPV (e.g., psychological abuse, sexually abusive behaviors, as well as physical abuse) (Saltzman et al. 2002). For the purpose of the current study, we focused specifically on the perpetration of physical abuse. While less common than psychological forms of aggression (Teten et al. 2009), these behaviors are more likely to be associated with increased severity and risk of injury (Swahn et al. 2010), and are most subject to official intervention.

Scholars such as Felson and Lane (2010) have argued that patterns of IPV should operate in a manner similar to other forms of antisocial behavior. Indeed, criminologists have shown delinquency and crime to follow a fairly predictable pattern (referred to as the age–crime curve) whereby delinquent and criminal behaviors increase during early and middle adolescence, peak during late adolescence, and rapidly decline during early adulthood (Hirschi and Gottfredson 1983; Steffensmeier and Streifel 1991; Sweeten et al. 2013). In the current analyses, we examined the age–IPV curve to determine whether these patterns parallel the age–crime curve extensively explored and documented in prior criminological research. Research within the latter tradition has also documented consistent differences in men and women's self-reports of delinquency and criminal behavior (Tittle et al. 2003). Because prevalence rates of male and female IPV perpetration (Caetano et al. 2008; Whitaker et al. 2007) are not as divergent as delinquency patterns, it is not clear whether the age–IPV curve follows a similar or distinctive course for men and women. Recent studies examining the etiological processes of IPV suggest a prominent role for relationship risk factors, in addition to the traditional familial and socioeconomic risk factors found to be predictors of criminal involvement (Capaldi and Kim 2007; Pepler 2012). This suggests the general importance of examining whether the developmental patterns of IPV perpetration differ from the previously documented delinquency pattern.

Studies of victimization patterns are critically important from a public health standpoint. Yet, recent work examining IPV among adolescent and young adults based on community studies has consistently found that perpetration and victimization experiences are often interrelated (Caetano et al. 2008; Melander et al. 2010). Furthermore, higher injury rates have been reported among those experiencing bidirectional violence (Whitaker et al. 2007), which characterizes the majority of young adult IPV experiences (Renner and Whitney 2012). Additionally, IPV perpetration is associated with lower levels of perceived health (Coker et al. 2000) and increased levels of depressive symptomatology (Johnson et al. 2014). Thus, analyses of victims only provide a limited understanding of the full range of IPV experiences. Moreover, whereas being a victim of IPV is not illegal, perpetration is; as such, it is important to understand how this behavior compares with other antisocial activities. Efforts to interrupt these destructive relationship patterns will need to focus on the perpetration itself, as well as on efforts to provide support to victims. Establishing a recognized age-related pattern of IPV perpetration may provide a launching point for future theoretical and empirical studies aimed at identifying distinguishing risk factors associated with onset, persistence, intermittency, and desistance of relationship violence. Greater understanding of these developmental processes may work to promote relationships that safeguard against IPV.

To accomplish the objectives stated above, we relied on five waves of data from the Toledo Adolescent Relationships Study (TARS). We examined the relationship between age and IPV perpetration among a diverse sample of young men and women spanning the ages of 13–28 years (N = 1,164). We investigated whether the observed age-related pattern of IPV perpetration varies by gender, is unique from age-related patterns of general antisocial behavior, as well as accounting for factors that distinguish age variation in IPV perpetration. Finally, we discuss the implications of our results as it relates to future work and social policy efforts.

Prior Research on Factors Associated with Age-Related Variations in Crime

As introduced above, the age pattern of crime is one that peaks in adolescence and declines in adulthood and is referenced by criminologists as the age–crime curve (Sweeten et al. 2013). Scholars have often explored developmental changes in delinquency and criminal behavior. These efforts have frequently focused on the assumption of adult roles and responsibilities as key to understanding the rather reliable declines in offending captured by the age–crime curve (Massoglia and Uggen 2010). For example, the entry into marriage, involvement in gainful activity, and becoming a parent serve to reorder priorities, shift routine activities, and develop a stake in conformity that individuals do not wish to jeopardize by engaging in illegal activities (Siennick and Osgood 2008).

Certainly, research has shown that delinquency itself is a significant predictor of intimate partner violence (Simons et al. 2008; Simons et al. 1998). This suggests that temporal shifts in one arena (crime) will accord with age-graded changes in the other behavioral domain (IPV). However, recent scholarship on risk factors for intimate partner conflict highlights that more serious relationships of longer duration are more likely to engender this type of conflict, and the more general literature on intimate relationships has documented increases in seriousness and

relationship duration as individuals mature into adulthood (Giordano et al. 2012). This raises the possibility that the patterning of IPV may not follow or take the same form as has been observed in prior research focusing exclusively on delinquency and criminal behavior. Thus, to understand the patterning of IPV requires the examination of traditional crime correlates along with relationship-specific risk factors.

The Influence of Gender on Crime and IPV

As suggested at the outset, gender differences in crime are observed at every age and in every jurisdiction, and these disparities are apparent whether the focus is upon self-reports or official statistics (Maxfield et al. 2000). However, researchers have grappled with the meaning of survey data indicating relatively high rates of IPV perpetration as self-reported by girls and women as well as their male counterparts (Johnson 1995, 2006). Scholars have argued that it is not appropriate to consider these reports as providing evidence of gender symmetry in the perpetration of IPV, because responses and the behaviors they index may have distinct meanings within the relationship context, as well as different effects and consequences (Anderson 2013). However, stipulating that these meanings and effects may be distinctly gendered, our objective in the current investigation is to provide an overview of age-related variability in prevalence, whether male and female respondents' patterns are similar or distinct, and whether a similar roster of risk-factors is implicated in these observed age-related variations.

In general, gender differences in socialization during early childhood are posited to result in the development of different social norms and skill sets among boys and girls (Gilligan 1982), along with different propensities for and social reinforcement for various forms of risk-taking, including delinquency. Although girls generally are not socialized into such a risk-taking tradition, some researchers have noted that gender differences are not as marked when childhood and adolescent relational aggression are considered (e.g., Crick et al. 2006; Owens et al. 2000; Rose et al. 2004). In addition, these broad gender portraits do not take into account the ways that socioeconomic status and neighborhood factors may influence behavioral repertoires. For example, recent work revealed that neighborhood disadvantage attenuated much of the gender gap in violent offending, thus highlighting variations by context that can potentially condition the effects of gender (Zimmerman and Messner 2010). Specifically, girls from disadvantaged neighborhoods were not only differentially exposed to violent peers (relative to girls in less disadvantaged neighborhoods), but were also more susceptible to exposure from violent peers. While prior work has suggested that males are more likely to be influenced by violent peers (Messerschmidt 1993), others have suggested that girls and women (particularly those with histories of prior victimization) may use violence as a means of protection and retaliation (Daly 1998; Miller 2008). Women's use of violence may thus serve an instrumental purpose within disadvantaged contexts, providing a basis for exploring further the variation within a contemporary sample in young women's own reports about the resort to violence within their intimate relationships. While clearly male-on-female violence has larger implications with respect to inducing physical injury (e.g., Warner 2010), recent research suggests that within-individual variability in depressive symptoms among both women and men were influenced by the pattern of their IPV exposure (Johnson et al. 2014). Thus, greater understanding of the development of IPV perpetration for both men and women is warranted.

Changes in Intimate Partner Violence and Risk Factors

Early theories of intimate partner violence (IPV) posited that male patterns of aggression would escalate over time, increasing in both frequency and severity (e.g., Walker 1984). This early work, with its reliance on married adult samples, focused primarily on the patterns of IPV within a given relationship (e.g., O'Leary et al. 1989). Contemporary research on IPV, however, has broadened the focus to include variation in IPV across intimate relationships (Carbone-Lopez et al. 2012; Shortt et al. 2012; Whitaker et al. 2010). This shift reflects a growing interest in understanding not only whether IPV changes over time within a relationship, but also age-related patterns of IPV that transcend relationship continuity. It is important to consider how IPV changes across relationships since it is generally assumed that IPV reaches its peak during late adolescence and young adulthood (O'Leary 1999), and there is considerable turnover in romantic partners during this period (Arnett 2004). Whitaker et al. (2010) found that, while IPV perpetration in a prior relationship was positively associated with IPV perpetration in the subsequent relationship, 70.3 % of those prior perpetrators had desisted, thus demonstrating the high rate of variability in IPV experiences across relationships. Shortt et al. (2012) found that stability in IPV perpetration among their sample of men was greater within relationships (meaning those who remained with the same partner), than across relationships (those who changed partners). Equally important, they also found that IPV perpetration was highest among these men during the early twenties, followed by subsequent declines.

The above work represents an important step forward by showcasing that while there is a degree of stability in the perpetration of IPV, there is also considerable change, and some change may be associated with age. What remains unanswered is why IPV involvement increases across the life stages of adolescence and young adulthood, and subsequently decreases as young people progress through their twenties. To account for age-related changes in IPV perpetration, we selected variables previously identified as relating to the perpetration of IPV. These include behavioral and psychological risk factors, as well as risk factors specific to the relationship context.

Behavioral and Psychological Risk Factors

Antisocial Behavior

Developmental and life course criminology have considered the association between antisocial behavior and IPV using samples that include both men and women (e.g., Ehrensaft et al. 2004; Lussier et al. 2009; Magdol et al. 1997). Such work generally has tested the competing hypotheses of stability (population heterogeneity), and change (state-dependent) that are also thought to underlie patterns of antisocial behavior and crime (Cernkovich and Giordano 2001). Childhood and adolescent risk factors theorized to influence ongoing antisocial behavior including generalized violence, alcohol and substance use, and other forms of offending, are posited as exerting a similar influence on IPV (Simons et al. 1998). Such work suggests that IPV and antisocial behavior are likely to follow a similar age pattern.

Consideration of women's perpetration of IPV continues to be a controversial topic (Palmetto et al. 2013), and there are few studies examining trends in women's IPV perpetration across the life course in general, and more specifically, how the perpetration of IPV among women may relate to other patterns of offending. Felson (2006) distinguished between a "gender perspective," that suggests an etiology unique to IPV, and a "violence perspective," that suggests more similarities than differences between IPV and other violent offenses. The violence perspective also assumes that risk factors will operate similarly for men and women. Evidence from past studies has provided support for the view that those men and women who engage in the most serious forms of IPV, namely intimate partner homicide, are similar to other violent offenders irrespective of gender (Felson and Lane 2010; Felson and Messner 1998). This work, however, has limitations due to the emphasis on a particular subset of the population (e.g., homicide offenders), and the exclusive focus on adults. In contrast to the research on homicide offenders, prior survey research consistently has demonstrated that adolescent girls' and young women's levels of antisocial behavior, including violence, are lower relative to patterns exhibited by adolescent boys and young men (Park et al. 2010; Steffensmeier et al. 2005). Nevertheless, studies examining intimate partner violence using community- and school-based samples have generally found rates of female perpetrated violence that are as high or higher than those of male perpetrated violence, particularly among younger samples (Archer 2000; Melander et al. 2010; Whitaker et al. 2007). Thus, patterns of IPV perpetration among female youth during adolescence and young adulthood do not converge with patterns of other antisocial behaviors including violence. Consequently, we expect that the degree that antisocial behavior accounts for changes in IPV perpetration among adolescent girls and young women may be limited.

Alcohol and Substance Use

Often cited as a major proximal predictor of IPV (Coker et al. 2000; Leonard 1993; Magdol et al. 1997), alcohol and substance use has been theorized to influence IPV by decreasing self-regulation (Flanzer 2005), increasing negative affective states (e.g., depression) (Fagan and Browne 1994), exacerbating relational conflicts (Quigley and Leonard 2000), or eroding relationship quality (White and Chen 2002). Work examining patterns of alcohol and substance use has found that it initiates during adolescence and continues to increase through the early twenties (Chassin et al. 2004). In a recent meta-analysis, Capaldi et al. (2012) reported that while there is evidence that IPV and alcohol and substance use are linked, the association may not be straight-forward. Alcohol and substance use are often bound up with other antisocial behaviors, such as delinquency and criminal offending. Yet, alcohol use becomes normative and legal in young adulthood suggesting a potentially less direct link between alcohol use and IPV as respondents move from adolescence into adulthood. Further, associations with IPV attributed to alcohol and drugs may be an artifact of the relationship between other, more general offending behaviors and IPV.

Depressive Symptoms

While prior work has found IPV to be associated with increases in depressive symptomatology (Johnson et al. 2014), it is possible that the relationship is reciprocal. Yet, studies examining the association between depressive symptoms and IPV perpetration have yielded mixed results (Caetano et al. 2008; Melander et al. 2010). Since these examinations of community samples have relied on perpetration data limited to adults in the Add Health, further consideration of this association is warranted. Prior studies

examining trajectories of depressive symptoms have observed increases during adolescence, and by young adulthood levels have either plateaued or slightly declined (Meadows et al. 2006; Wickrama et al. 2008). Trajectories for teen girls and young women demonstrate higher levels of depressive symptoms relative to their male counterparts, particularly during adolescence (Ge et al. 1994; Joyner and Udry 2000). Given that women's trajectories of depressive symptoms typically display greater variation over the transition from adolescence to young adulthood relative to men's trajectories, we expect depressive symptoms to be more meaningful in accounting for age-related changes in IPV perpetration among female youth.

Relationship Risk Factors

Relationship Type and Continuity

As young people progress through adolescence, relationships take on greater psychological centrality (Giordano et al. 2012), and increase in duration (Furman and Shaffer 2003). During the transition to adulthood, dating relationships transform into the more committed unions associated with cohabitation and marriage (Raley et al. 2007). Comparing IPV rates among dating, cohabiting and married individuals, those who cohabit have the highest risk of IPV, followed by married couples and then daters (Brown and Bulanda 2008). Additionally, relationship continuity has been linked to increased risk of IPV as longer relationships provide more exposure to the risk of IPV. Examining the perpetration of IPV by men, Shortt et al. (2012) found greater stability in IPV among those who stayed with partners relative to those who changed partners. These results suggest movement into more serious relationships of longer duration likely accounts for increases in IPV involvement during young adulthood.

Relationship Stressors

A key activity during young adulthood is pursuing higher education as well as greater participation in the paid labor force. Gainful activity in the form of education, employment, or both, generally has been viewed as protective against the risk of IPV because it represents sources of social and economic capital (Zweig 2004). Individuals who lack such resources are posited to be at greater risk for stress and its related outcomes including feelings of hostility (Conger et al. 1993). Prior work examining partner aggression using the TARS data revealed that lack of gainful activity had its greatest effects when both partners were idle (Alvira-Hammond et al. 2014). This association was present among dating couples, as well as coresidential partnerships.

The mean age at first birth is 25 years (National Vital Statistics System 2013), so young adulthood for many individuals is a period of transitioning into parenthood. The presence of children in the household is often cited as a source of relationship stress. Disagreements between partners may arise over childrearing issues including discipline, and the division of childcare responsibilities (DeMaris et al. 2003). Additionally, the presence of children (particularly preschoolers) has been associated with lower marital quality (Amato et al. 2003). Thus, while transitions into adult roles bring about opportunities for the development of social capital that may protect against antisocial behavior (Laub and Sampson 2003), entry into parenthood, or failure to achieve gainful activity may exacerbate relationship stress, and facilitate verbal disagreements that have the potential to erupt into physical violence.

Relationship Quality

In the current study, we considered three relationship characteristics reflecting relationship quality and linked to IPV in previous studies: disagreements, trust, and jealousy. Frequency of disagreements is an important precursor to partner violence and an indicator of psychological aggression (Capaldi et al. 2012). DeMaris et al. (2003), for example, found that in their sample of adults, frequency of disagreements increased the odds of physical aggression by 7 %. Furthermore, levels of disagreement tend to vary across relationships (Laursen and Hafen 2010), highlighting the need to consider the longitudinal association with IPV. Additionally, few studies have considered the effects of trust on IPV. Amato and Booth (2001) theorized that individuals lacking in trust may engage in behaviors that compromise relationship quality. This is consistent with work from Linder et al. (2002), which found romantic relational aggression is associated with lower levels of trust, and higher levels of jealousy. Prior work has found that men and women are equally likely to identify jealousy as a precipitating factor for IPV (O'Keefe 1997). As discussed previously, the sequential progression of intimate involvement leads to relationships that are characterized by longer duration, greater saliency, and higher levels of commitment (Connolly et al. 2004; Meier and Allen 2009). For many, these may represent positive developments including improvements in relationship quality, such as lower frequency of disagreements and jealousy, and greater trust (Giordano et al. 2012). Intimate relationships in early adulthood relative to those in adolescence, however, are also likely to afford more opportunities for disagreements to occur, and potentially escalate into violence by sheer virtue of their longer duration and because partners may be living together as a cohabiting or married couple.

We consider three additional measures of relationship quality that have received less attention within the IPV literature. These include commitment, validation, and self-disclosure. Rhoades et al. (2010) found that physical aggression was positively associated with a break-up in the relationship one year later, suggesting a negative association with commitment. One of the few studies to examine the influence of validation on IPV found no association (Halpern-Meekin et al. 2013), but prior results have revealed that it is predictive of relationship disruption (Dailey et al. 2009). Self-disclosure is viewed as protective, fostering greater commitment and relationship satisfaction (Sprecher and Hendrick 2004), although in one recent cross-sectional study, self-disclosure was not associated with dating violence in adolescence (Giordano et al. 2010). These aspects of relationship quality are useful within the framework of the current study in that they may reflect changes in how young people experience relationships, and thus potentially alter the risk of experiencing IPV.

The Present Study

Over the last decade, research on IPV has progressively made use of longitudinal data and evolved in meaningful ways. There is increasing interest to understand developmental patterns of IPV (Capaldi and Kim 2007; Ehrensaft et al. 2004). We contribute to these efforts in two ways. First, it is often assumed that IPV peaks during the early twenties (Capaldi and Kim 2007; O'Leary 1999). Yet, to date, this has not been verified through a direct examination of IPV patterns across adolescence and young adulthood using a continuous measure of age. We hypothesize that an age–IPV curve will likely confirm patterns theorized in prior work, demonstrating an increase during adolescence, peaking in the early twenties, followed by subsequent decreases. While we expect this pattern for IPV perpetration to be similar for male and female youth, consistent with findings from prior work examining patterns of IPV during adolescence and young adulthood based on community and school-based samples, we expect trajectories for teen girls and young women to be higher than their male counterparts. Second, a limitation of the IPV literature is its primary focus on between-individual differences. Consideration of within-individual change is necessary to understand age-related changes (Sampson and Laub 2005; Sweeten et al. 2013). In the multivariate analyses, we examine how changes within individuals correspond to within-individual change in IPV perpetration, while controlling for unmeasured heterogeneity that could influence selection processes. That is, our focus is on predicting change within an individual's trajectory regardless of whether the trajectory is high, moderate, or low. Of primary importance is the extent that these within-individual changes account for age variation in IPV. We hypothesize that relationship factors, relative to traditional behavioral and psychological risk factors, will do more in explaining variation in IPV perpetration by age due to their proximity to IPV in the current or recently reported relationship.

Methods

Overview of Study Data

The TARS sample (n = 1,321) was drawn from the year 2000 enrollment records of all seventh, ninth, and eleventh graders in Lucas County, Ohio. The sampling frame consists of 15,188 eligible students, and is divided into 18 strata by grade, race-ethnicity (non-Hispanic White, non-Hispanic Black, and Hispanic), and gender. Random subsamples were selected from each strata to achieve a total sample of 2,273 students. Of these students, we contacted 1,625, with 304 refusals, resulting in a total sample of 1,321, or 81.3 percent of the original 1,625 students who were contacted. The stratified, random sample, devised by the National Opinion Research Center, oversampled black and Hispanic adolescents. Unlike school-based studies, school attendance was not required for sample inclusion. We conducted interviews in respondents' homes using preloaded laptops to maintain privacy.

Analytic Sample

For the current study we used data from all five waves. Wave 1 interviews were conducted in 2001, interviews for wave 2 occurred approximately one year later (2002/2003), with interviews for wave 3 (2004/2005) and wave 4 (2006/2007) following in two year intervals, and wave 5 (2011/2012) representing the most recent data collection. Retention rates from the first interview were 89.1 percent for the second interview, 84.4 percent for the third interview, 82.8 percent for the fourth interview, and 77.8 % for the fifth interview. An advantage of multilevel modeling (described below) is that it allows for incomplete data on within-individual measures. Respondents who reported no dating partners over the five waves were eliminated from the analytic sample (n = 48). Additionally, the youngest (12 years) and oldest (29 years) observations (n = 37) were dropped as there were too few to include in the analyses. Finally, only 1 respondent had no valid data at the between-individual level. Thus, we retain virtually all of our eligible respondents for the analyses. The final analytic sample (n = 1,235) represents an 11-year accelerated cohort design with three overlapping cohorts covering ages 13 to 28 years.

Sixty-nine percent of respondents participated in every data collection interview. We conducted *t* tests comparing mean IPV perpetration rates across the five waves for those missing versus those who had participated at any given wave, and found no significant differences. Further attrition analyses revealed that respondents with higher participation rates are slightly younger, more likely to be female, and more likely to report drug and alcohol offenses at wave 1. Participation was not correlated with wave 1 scores of general antisocial behavior or depressive symptoms. Finally, less than 2 % of all observations were missing due to non-responses. Furthermore, an estimation of our final model employing multiple imputation of the missing data revealed results that were virtually identical, and therefore not shown.

Measures

Our primary interest is in change in IPV perpetration, and with the exception of gender we focused exclusively on time-varying factors. Each of our time-varying measures were assessed at all five waves. The multilevel regression approach described by Osgood (2005) provided the means to investigate not only how changes in risk factors corresponded to changes in IPV perpetration, but also to what degree they account for any age-related trends.

Dependent Variable

IPV perpetration was assessed across all five waves by using four items from the Conflict Tactics Scale (Straus 1979). Respondents were asked how often they committed the following acts against their current or most recent partner: "thrown something at him/her;" "pushed, shoved or grabbed him/her;" "slapped him/her in the face or head with an open hand;" and "hit him/her." Responses were scored on a 5-point scale that ranged from 1 (*never*) to 5 (*very often*). Those responding "never" to all items were coded as 0, and others were coded as 1. The average alpha score across waves for this measure is .88.

General Antisocial Behavior

We created two measures of antisocial behavior using 10 items adapted from the 26-item inventory by Elliott and Ageton (1980). The first measure, *general antisocial behavior,* consists of seven items assessing how frequently respondents engaged in theft (major and minor), breaking and entering, assault and battery, property damage, selling drugs, and carrying a hidden weapon. Due to the skewed response pattern (79.7 % of observations are zero scores), we created a dichotomous measure such that respondents who reported never engaging in any of these behaviors were coded as 0 and 1 otherwise. The average alpha score for this scale across waves is .79.

Alcohol and Drug Use

This second measure of antisocial behavior was assessed using a three-item mean scale of the frequency of drinking alcohol, using illegal drugs, and public drunkenness. Responses for each of these measures were scored on a 9-point scale that ranged from 1 (*never*) to 9 (*more than once a day*). This scale also demonstrated some skewness, which we corrected by using the logarithm of the scale. The average alpha score for this scale across waves is .71.

Depressive Symptoms

Using a 7-item modified version of the Center for Epidemiological Studies' depressive symptoms scale (CES-D) (Radloff 1977), respondents were asked how often each of the following statements was true during the past seven days: (1) "you felt you just couldn't get going"; (2) "you felt that you could not shake off the blues"; (3) "you had trouble keeping your mind on what you were doing"; (4) "you felt lonely"; (5) "you felt sad"; (6) "you had trouble getting to sleep or staying asleep"; and (7) "you felt that everything was an effort." Responses ranged from 1 (*never*) to 8 (*every day*). This is a mean scale of the seven items with an average alpha score across waves of .85. Due to skewness we use the logarithm of the scale.

Relationship Type

We assessed whether the current or most recent relationship reported by respondents was a dating, cohabiting or marital relationship with dating as the referent.

Partner Retention

Respondents who had retained their partner between waves were coded as 1, while those who had changed partner between waves were coded as 0.

Gainful Activity

Respondents who were attending school or employed full-time were coded as 1. Respondents who were not engaged in either activity were coded as 0.

Children Present in the Household

This measure was coded as 1 if the respondent reported having children and that the children were living in the

residence, while those with no children, or children living outside the home were coded as 0.

Frequency of Disagreements

Respondents were asked how often they and their partner had disagreements or arguments. Responses ranged from 1 (*never*) to 5 (*very often*).

Trust

Respondents were asked how much they agreed or disagreed that there were times that their partner could not be trusted. Responses were scored using a 5-point Likert scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) and were then reverse coded so that higher scores reflected higher levels of trust.

Jealousy

Using a single-item and the same 5-point Likert scale as above, respondents were asked how much they agreed or disagreed that they felt jealous when their partner was around the opposite sex.

Commitment

Respondents were asked, "How often have you seriously considered ending your relationship with [partner]?" Responses were scored on a 5-point scale that ranged from 1 (*never*) to *5* (*very often*).

Validation

This measure used the mean of two items, "[partner] makes me feel attractive," and "[partner] makes me feel good about myself." Responses were scored on a 5-point likert scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

Self-disclosure

Respondents were asked how often they talked to their partner about the following things: "something really bad happened," "your home and family life," and "your private thoughts and feelings." Responses were scored on a 5-point scale that ranged from 1 (*never*) to *5* (*very often*). We used the mean of the three-items and the average alpha score for this scale is .86.

Analytic Strategy

For covariates to potentially explain the age–IPV relationship, they must vary with age. We begin with descriptive analyses that examine the variability of our time-varying measures by age. We conducted one-way ANOVAs using continuous age as our factor variable and report the f-statistics in our table of descriptive statistics. Our second set of analyses examined the relationship of IPV perpetration and age, behavioral and psychological risk factors, as well as the relationship context. Analyses examining trajectories of social phenomena over time may consider factors that distinguish one trajectory over another (between-individual), or factors associated with a change in the trajectory at the individual level (within-individual) (Osgood 2005). Each approach has the potential to yield important information about trajectories of IPV across adolescence and young adulthood, but for the current analyses we focus on within-individual change.

We employed a 2-level hierarchical generalized linear model (HGLM) for binary outcomes with a logit link. Analyses were conducted using StataSE 13 and robust standard errors. The HGLM approach allowed us to model trajectories of IPV perpetration over time, while incorporating observations missing at random. We restructured the data into an accelerated cohort design (Singer and Willett 2003), which uses adolescent age (centered at age 13) rather than the data point as the metric of time. This allowed us to model trajectories of IPV perpetration from the youngest observed age (age 13) through the oldest age (age 28). To rule out potential cohort effects, we investigated whether time (data point), or age interacted with cohort. These interactions were non-significant.

We begin by estimating a random effects model for our binary response. Similar to recent work examining the age–crime curve (Sweeten et al. 2013), inclusion of time-varying measures allowed us to examine to what extent behavioral and psychological risk factors explained the age trend in IPV perpetration, relative to relationship-specific factors. This is accomplished by comparing age coefficients in a base model (age and gender) to the age coefficients of a model with the time-varying explanatory variable(s) of interest. Little change in the age coefficients would reinforce theories of stability, the need for identifying latent risk factors, and a continuing focus on between-individual differences. Reductions in the age coefficients in the elaborated model, however, would suggest that the variable(s) of interest have accounted for some of the age–IPV relationship. This would not only challenge notions of stability or that changes simply reflect an "aging of the organism" (Gottfredson and Travis 1990), but also indicate a need to consider developmental changes and variations in the relationship context.

Although our outcome is binary, we estimated an unconditional means model, specifying the outcome as continuous, to obtain approximations of the variance at the between- and within-individual levels. These results

indicated that 77.1 % of the variance is within-individual (level one), while 22.9 % of the variance is between-individual (level two), supporting our decision to focus on within-individual change. Estimation of an initial growth model indicated that growth was best captured through the inclusion of both a linear and quadratic age term, demonstrating an overall curvilinear pattern. Thus, our analyses to follow included both age and age-squared, with age centered at the youngest age of 13 years.

The final model involves observations nested within individuals. The level-1 equation, which captures within-individual variation, is given by:

$$n_{ti} = \pi_{0i} + \pi_{1i}\text{Age}_{ti} + \pi_{2i}\text{Age}_{ti}^2 + \pi_{3i}\mathbf{X}_{ti} \quad (1)$$

which models n_{ti}, the log odds of perpetrating IPV at age t for person i as a function of an initial level of IPV perpetration (π_{0i}), change in that level with age, and a vector of time-varying covariates ($\mathbf{X}_{ti}$). To differentiate between-individual effects from within-individual change, we followed the procedure of group-centering our time-varying predictors as described in prior work (Horney et al. 1995; Allison 2005). That is, we transformed responses for each of our time-varying covariates into deviations from each individual's mean as calculated across all periods of observation, which are included at level one, while including a person-level mean for each time-varying predictor at level two. A primary advantage of this approach is that it yields fixed-effects estimates of the time-varying covariates in the model, minimizing the potential threat of unmeasured heterogeneity (Allison 2005). This obviates the need to control for between-individual indicators such as race/ethnicity or SES. These individual means ($\bar{\mathbf{X}}_i$) were then included as explanatory variables in the level-2 equation, which captures between-individual variation in IPV perpetration:

$$\pi_{0i} = \beta_{00} + \beta_{01}\bar{\mathbf{X}}_i + r_0 \quad (2)$$

$$\pi_{1i} = \beta_{10} + \beta_{11}\bar{\mathbf{X}}_i \quad (3)$$

$$\pi_{2i} = \beta_{20} + \beta_{21}\bar{\mathbf{X}}_i \quad (4)$$

$$\pi_{3i} = \beta_{30} \quad (5)$$

Here, the effects of between-individual differences in behavioral, psychological and relationship risk factors on the intercept (initial value) and slope (change with age) of IPV perpetration were captured by β_{01}, β_{11}, and β_{21} (Eqs. 2–4). That is, these measures were modeled as predictors of both the intercept and slope of IPV perpetration, although we do not present the results for the between-individual effects given our focus on within-individual change, which is captured by β_{30} (Eq. 5). Using person-centered indicators in the level-one equation restricts β_{30} to within-individual change. Inclusion of these deviation scores is what allows the model to differentiate the effects of between-individual differences and within-individual change (Horney et al. 1995).

Results

Descriptive Results

Table 1 provides the means and percentages for the study variables by age and gender, as well as a grand mean calculation for comparison. To present results parsimoniously, we group age into four categories covering four years each. For male youth, IPV perpetration increased from 13 % at 13–16 years to 19 % at 17–20 years. This is followed by subsequent decreases at 21–24 years (15 %) and 25–28 years (10 %). The pattern for female youth is similar, but is consistently higher with a peak of 29 % at ages 21–24 years. The age pattern for general antisocial behavior displayed a curvilinear pattern similar to the one for IPV perpetration among adolescent boys and young men increasing slightly from 30 % at 13–16 years to 33 % at 17–20 years followed by decreases at 21–24 years (25 %) and 25–28 years (18 %). In contrast, female youth steadily decreased in antisocial behavior from a peak of 25 % at 13–16 years to 6 % at 25–28 years. It should also be noted that rates of general antisocial behavior among male youth were higher than their rates of IPV perpetration. Thus, discontinuities between general antisocial behavior and IPV perpetration emerged early in the analyses.

Consistent with the notion that romantic involvement is a developmental sequence, we can see a progression from dating to cohabiting and marital unions for both genders. By age 25–28 years, 37 % of men were cohabiting and 23 % were married, and 32 % of women were cohabiting, and 34 % married. We also observed increases in partner retention with 26 % of men age 21–24 years retaining a partner compared to 15 % of men ages 17–20 years. Similarly, partner retention rates increased from 22 % for women ages 17–20 years, to 33 % for women ages 21–24 years. With the exception of commitment, relationship qualities also demonstrated some degree of variability across age.

Growth Curve Results

Table 2 shows the results of our hierarchical generalized linear models. Data were pooled across gender, and included gender and interactions of age and gender. Model 1 presents the results for our unconditional growth models by gender. We used female as the reference so the coefficients for our age terms represented the effects of age for

Table 1 Means/proportions and standard deviations of analytic sample by age, toledo adolescent relationships study (TARS) (n = 1,235 respondents, 4,510 observations)

	Male Youth (47.5 %)				Female Youth (52.5 %)				Grand mean	Range	F
	13–16 (27 %)	17–20 (42 %)	21–24 (18 %)	25–28 (13 %)	13–16 (25 %)	17–20 (42 %)	21–24 (19 %)	25–28 (14 %)			
Age	14.88	18.38	22.35	26.35	14.92	18.38	22.37	26.48	19.31	13–28	
	(1.09)	(1.09)	(1.04)	(1.13)	(1.09)	(1.10)	(1.00)	(1.06)	(3.88)		
IPV perpetration	0.13	0.19	0.15	0.10	0.20	0.23	0.29	0.16	0.19	0–1	3.20***
Behavioral and psychological factors											
General antisocial behavior	0.30	0.31	0.25	0.18	0.25	0.16	0.11	0.06	0.22	0–1	5.79***
Alcohol and substance use	0.32	0.74	1.11	1.00	0.37	0.68	0.90	0.80	0.69	0–2.2	72.94***
	(0.49)	(0.62)	(0.53)	(0.53)	(0.48)	(0.57)	(0.52)	(0.50)	(0.59)		
Depressive symptoms	0.69	0.72	0.76	0.72	0.85	0.81	0.80	0.74	0.77	0–2.1	1.48
	(0.43)	(0.46)	(0.47)	(0.44)	(0.46)	(0.46)	(0.47)	(0.49)	(0.46)		
Relationship risk factors											
Relationship type											
Dating	1.00	0.93	0.68	0.40	1.00	0.87	0.58	0.34	0.80	0–1	136.83***
Cohabiting	0.00	0.06	0.24	0.37	0.00	0.11	0.29	0.32	0.13	0–1	50.82***
Married	0.00	0.01	0.08	0.23	0.00	0.01	0.13	0.34	0.06	0–1	66.74***
Partner retention	0.05	0.15	0.26	0.27	0.07	0.22	0.33	0.35	0.19	0–1	30.56***
Gainful activity	0.99	0.76	0.71	0.70	0.99	0.75	0.63	0.67	0.79	0–1	58.35***
Children in household	0.01	0.08	0.26	0.40	0.02	0.14	0.38	0.49	0.17	0–1	63.58***
Frequency of disagreements	2.17	2.55	2.73	2.74	2.35	2.63	2.74	2.73	2.55	1–5	13.87***
	(0.93)	(1.00)	(0.97)	(0.87)	(1.04)	(0.99)	(0.95)	(0.95)	(0.99)		
Trust	3.74	3.75	3.93	4.15	3.61	3.75	3.80	4.00	3.80	1–5	4.27***
	(1.06)	(1.15)	(1.08)	(1.11)	(1.20)	(1.23)	(1.28)	(1.24)	(1.18)		
Jealousy	2.49	2.80	2.60	2.46	2.77	2.86	2.71	2.44	2.70	1–5	5.79***
	(1.06)	(1.12)	(1.14)	(1.17)	(1.17)	(1.14)	(1.21)	(1.15)	(1.15)		
Commitment	3.87	3.85	3.72	3.94	3.84	3.95	3.83	3.94	3.87	1–5	1.16
	(1.05)	(1.05)	(1.08)	(1.07)	(1.14)	(1.03)	(1.14)	(1.16)	(1.08)		
Validation	3.66	3.80	3.92	3.94	3.94	4.15	4.13	3.98	3.94	1–5	5.63***
	(0.80)	(0.81)	(0.76)	(0.85)	(0.83)	(0.75)	(0.79)	(0.90)	(0.82)		
Self-disclosure	3.23	3.58	3.72	3.87	3.59	4.00	4.14	4.13	3.76	1–5	22.37***
	(1.06)	(1.01)	(0.88)	(0.89)	(1.07)	(0.93)	(0.87)	(0.83)	(1.01)		

Standard deviations are in parentheses

* $p < .05$; ** $p < .01$; *** $p < .001$

female youth. Both age and age-squared were significant, indicating a curvilinear relationship. The effect for male and the gender interactions are not significant because we have centered age at 13 years. If we centered our age terms to any age at 17 years or above, both gender and the interactions were significant. Thus, our results indicated that for ages 13 through 16 the risk for perpetrating IPV was similar for adolescent boys and girls. By age 17, however, the trajectories of IPV perpetration for male and female youth diverged, with female youth demonstrating a curve that was, on average, higher than the curve for male youth. Figure 1 graphs the unconditional growth models by gender, illustrating these divergent growth curves. Thus, these initial growth curves support our first two hypotheses. First, IPV perpetration demonstrates a curvilinear pattern with a peak around age 20. Second, the trajectory for female perpetrated IPV is demonstrably higher relative to the trajectory for male perpetrated IPV.

Figures 2a, b provide comparisons of each unconditional growth model of IPV perpetration to an unconditional growth model of general antisocial behavior. Figure 2a shows that for male youth the trajectory for antisocial behavior is considerably higher relative to the trajectory for IPV perpetration, particularly during adolescence. Figure 2b shows that patterns of IPV perpetration and antisocial behavior among female youth were quite

Table 2 Hierarchical generalized linear model for IPV perpetration across adolescence and young adulthood (N = 1,235 subjects, 4,510 observations)

	Model 1		Model 2		Model 3		Model 4	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Age (centered age 13)	.333***	.062	.331***	.066	.212**	.068	.210**	.071
Age^2	−.021***	.004	−.021***	.004	−.018***	.004	−.018***	.004
Male	.046	.323	.068	.332	.438	.340	.307	.346
Male × age	−.140	.096	−.184	.098	−.207*	.101	−.232*	.102
Male × age^2	.005	.006	.008	.006	.009	.007	.010	.007
Behavioral and psychological risk factors								
General antisocial behavior			.204	.139			.230	.149
Alcohol and drug use			.140	.126			.132	.131
Depressive symptoms			.353*	.146			.037	.155
Relationship risk factors								
Relationship status								
(Dating)								
Cohabiting					.718***	.182	.695***	.180
Married					.777**	.279	.706*	.281
Partner retention					.045	.145	.066	.144
Gainful activity					.104	.135	.128	.136
Children in household					.050	.194	.069	.194
Frequency of disagreements					.570***	.065	.572***	.066
Trust					−.208***	.053	−.202***	.053
Jealousy					.230***	.059	.227***	.059
Commitment					−.119	.063	−.106	.062
Validation					−.245**	.081	−.251**	.081
Self-disclosure					.183**	.070	.174*	.070
Constant	−2.636***	.228	−3.799***	.290	−1.237	.750	−1.865*	.757

Between-subject effects are included in the model but not shown

* $p < .05$; ** $p < .01$; *** $p < .001$

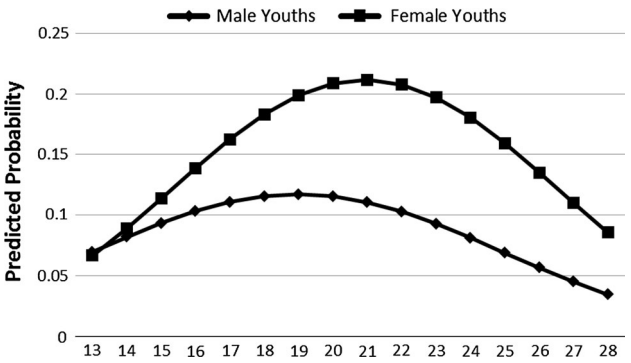

Fig. 1 Age curve for IPV perpetration by gender from age 13 to 28

distinct from one another. While adolescent girls' risk for antisocial behavior is decreasing, the risk for IPV perpetration is increasing, and continues increasing until it peaks at approximately age 21, and then begins to decline. These patterns are reflected in the results in model 2 of the multilevel analyses. Only the coefficient for depressive symptoms (b = .353, $p < .05$) is significant, demonstrating that an increase in this risk factor is associated with an increase in the odds of perpetrating IPV. With respect to age coefficients, however, there is little change. Results for male respondents showed that the linear age effect was reduced by 23.5 % (b = .146, $p < .05$), while the curvilinear effect for age was diminished by 18.8 % (b = −.013, $p < .01$), suggesting a flattening of the curve. Thus, while antisocial behavior and depressive symptoms each demonstrated a positive association with IPV perpetration, they account for only some of the age–IPV perpetration curve for young men, and virtually none of the age variation in IPV perpetration for young women. Consequently, to understand what is underlying the relationship between age and IPV perpetration, we moved beyond these traditional behavioral and psychological risk factors.

Model 3 presents the results for relationship risk factors. Transitions into cohabiting (b = .718, $p < .001$) and marital unions (b = .777, $p < .01$) were associated with a

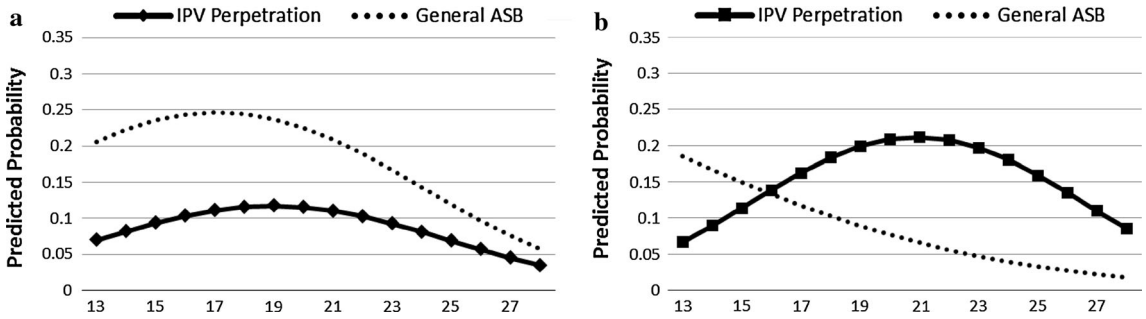

Fig. 2 **a** Age *curves* of IPV perpetration and general antisocial behavior for male youth from age 13 to 28. **b** Age curves of IPV perpetration and general antisocial behavior for female youth from age 13 to 28

higher risk of IPV perpetration relative to being in a dating relationship. Additionally, increases in the frequency of disagreements (b = .570, $p < .001$), jealousy (b = .230, $p < .001$), and self-disclosure (b = .183, $p < .01$) were associated with increased odds of perpetrating IPV, while increases in trust (b = −.208, $p < .001$) and validation (b = −.245, $p < .01$) were associated with lower odds of IPV. Furthermore, introduction of relationship risk factors into the model reduced the linear age effect for female youth by 36.3 % (b = .212, $p < .01$), and the age-squared effect (b = −.018, $p < .001$) by 14.3 %. For male youth the linear age effect is reduced by 97.9 % (b = .004, n.s.), and the age-squared effect by 43.8 % (b = .009, n.s.). Thus, relationship factors accounted for more of the variation in IPV perpetration by age than the behavioral and psychological risk factors.

Model 4 provides the results for the full model. Once frequency of disagreements or trust is included in the model, the effect for depressive symptoms was no longer significant. This suggests that depressive symptoms may influence IPV indirectly due its association with frequency of disagreements and trust. When considering both sets of risk factors, for male youth the coefficient for age was (b = −.023, n.s.) and for age-squared the coefficient was (b = −.007, n.s.). For female youth, the full model accounts for a total of 56.6 % of the age variation from ages 13 to 20, and 31.2 % of the age variation from ages 21–28. This is reflected in Fig. 3, which graphs the original unconditional growth models by gender (model 1), and the conditional growth models (model 4) by gender. While the conditional growth model for female youth shows a substantial improvement over the unconditional model, further work remains in identifying the risk factors associated with change in female patterns of IPV perpetration.

Finally, we explored whether any of the time-varying variables interacted with gender to influence patterns of IPV perpetration. None of these interactions were statistically significant. This finding indicated that the risk factors operated in a similar manner for male and female youth.

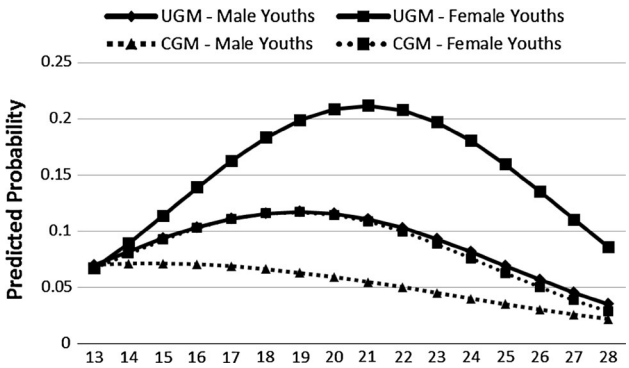

Fig. 3 Age *curves* for unconditional (UGM) and conditional growth models (CGM) of IPV perpetration by gender from age 13 to 28

Furthermore, the interactions between frequency of disagreements and age, and age-squared were significant. Thus, the association of frequency of arguments and IPV perpetration demonstrated a curvilinear pattern similar to the IPV perpetration curve. Specifically, the association between frequency of arguments and IPV perpetration increased in strength during adolescence, demonstrating its strongest association during the late teens, and subsequently weakening during the twenties. None of the other variables interacted with age.

Discussion

Over the last decade, there has been increasing attention given to partner violence during adolescence, as well as how these early experiences influence later involvement in IPV in young adulthood. To date, no research has traced IPV perpetration from adolescence into young adulthood. Rather, much of this work has been either cross-sectional or limited to two data points. This has hampered efforts to effectively assess within-individual change and thus, fully elucidate developmental patterns (Willett et al. 1998). Consequently, researchers have often relied on early

behavioral and psychological risk factors to assess (dis)continuities in IPV experiences. Yet, romantic relationships are subject not only to age-related changes, but also to changes that occur over the course of the relationship itself (Furman and Wehner 1997). Thus, due to the developmental nature of romantic relationships, proximal risk factors that are relationship-specific are paramount when assessing within-individual change in IPV.

Using a contemporary, diverse sample, we mapped patterns of IPV perpetration from adolescence to young adulthood. We demonstrated that the predicted probability of IPV perpetration reaches its peak in the early twenties and subsequently declines during the latter half of the twenties. While the risk of IPV perpetration was similar for adolescent boys and girls, the predicted probability of IPV perpetration was higher for female youth beginning at age 17 years and continuing to our oldest observed age of 28 years. The gender gap in reported IPV perpetration was highest during the peak period of the early twenties. While risk of IPV perpetration continued to be higher for women at age 28 relative to their male peers, the gender gap had narrowed considerably. This pattern of higher perpetration among females is consistent with prior studies that rely on the CTS to examine patterns of IPV among adolescents and young adults (Cui et al. 2013; Magdol et al. 1997; Melander et al. 2010; Whitaker et al. 2007). This is in contrast to studies using incident-based reports derived from official data, which reveal higher rates of male-perpetrated IPV (Hester 2013; Warner 2010). It should be noted however that these studies, as well as other self-report studies such as the National Violence Against Women Survey (NVAWS) rely on adult samples that cover a broader age range. It is entirely possible that the pattern of higher female perpetration is unique to the period of young adulthood. Thus, further work examining patterns of IPV (perpetration and victimization) is needed to investigate if these patterns demonstrate a gender cross-over later in the life course. That is, it may be that even as women's tendency to perpetrate violence against their partners continues to decline over the course of adulthood, men's propensity to perpetrate IPV may level off resulting in a reversal of the gendered pattern observed in adolescence and young adulthood. Recent theoretical work has highlighted the need for a developmental perspective of IPV that takes into account its inherently dyadic nature (Capaldi and Kim 2007; Pepler 2012). We concur, yet just as it is important to consider intersections between race, social class, and gender (Burgess-Proctor 2006), we must also think about the intersectionality between age and gender. While it has been acknowledged that the "social world is gender-typed" (Berenbaum et al. 2008:674), what remains unclear is how, and by which mechanisms, this influences behavior over time. In the current study, we attempt to shed some initial light in this area, by revealing how patterns of IPV change over time, and how these patterns differ among young men and women. Future efforts should also examine how these age patterns in the perpetration of IPV may be similar or vary according to race/ethnicity, as well as social class.

Scholars have argued that patterns of relationship violence follow patterns that parallel other forms of antisocial behavior. Researchers have demonstrated a fairly predictable pattern, referred to as the age–crime curve, in which crime peaks in the teens and then declines (Hirschi and Gottfredson 1983; Sampson and Laub 2005; Sweeten et al. 2013). Comparison of age-related patterns in IPV perpetration and general antisocial behavior revealed growth curves that were distinctive by behavior and gender. For female youth, risk of IPV perpetration increased even as their risk for more general delinquency-based antisocial behavior decreased. Thus, the trajectories of these two behaviors bear little resemblance to one another. While the shapes of the two curves were similar for male youth, the risk of antisocial behavior among male youth was considerably higher. As noted by Douglas and Straus (2006), partner violence perpetrated by men in the U.S. has significantly decreased in large part due to feminist-led efforts to shape social policy and raise public awareness. This is supported by recent findings (Simon et al. 2010) showing that jurisdictions with mandatory or preferred arrest policies had higher odds of making an arrest for domestic violence or violation of a protection order. Thus, for some young men, including those who engage in other antisocial behaviors, considerations of jail, or internalization of emerging norms regarding the social undesirability of being labeled an IPV perpetrator, may inhibit them from engaging in the perpetration of IPV. Further work is needed here to connect precisely how social policy changes at the macro level influence individual behavior at the micro level.

Antisocial behavior was associated with higher odds of individual change in partner violence even after accounting for relationship risk factors. Consistent with prior studies, antisocial behavior in adolescence has consistently been linked to partner violence in both adolescence (Maas et al. 2010; Simons et al. 1998) and adulthood (Ehrensaft et al. 2004; Magdol et al. 1997). Additional evidence suggests this link is reinforced through assortive mating patterns whereby antisocial youth are more likely to select antisocial partners, further increasing risk for partner violence (Kim and Capaldi 2004). Yet, our own analyses provided no evidence that antisocial behavior, alcohol and drug use, and depressive symptoms directly accounted for any of the age variation in IPV perpetration among female youth. These behavioral and psychological risk factors, however, did account for 23.5 % of the linear age effect for male

youth. Consequently, factors associated with changes in antisocial behavior may also account for some change in IPV perpetration among adolescent boys and young men.

Frequency of disagreements, trust, jealousy, and validation all demonstrated significant associations with IPV perpetration in the expected direction. Commitment was not significantly related to IPV, however, this may be due to our inability to differentiate between dimensions of commitment such as personal dedication (e.g., desire to maintain or improve the relationship) and constraint commitment (e.g., lack of relationship alternatives, structural and material investments) (Stanley and Markman 1992). Self-disclosure operated contrary to our expectations, demonstrating a positive association with IPV. Keeping in mind that the current study was assessing within-individual changes in self-disclosure, it is possible that some youth may reveal too much, too soon within the context of their relationships. It is possible that intimate self-disclosures may be used as ammunition during arguments, or potentially fuel sexual jealousies. Future qualitative studies would be useful in revealing more about how and when disclosures are protective versus detrimental to the relationship.

Overall, romantic relationship factors accounted for greater variation by age in IPV perpetration for both men and women. While romantic relationships are common in adolescence, romantic involvement increases with age. Connolly and McIsaac (2009) found that romantic involvement increased from 25 % at 12 years to 50 % at 15 years, and by age 18, 70 % of youth reported romantic involvement. With this increased involvement comes the potential for greater volatility, and mismatches of commitment levels and expectations (Miller and White 2003). Yet, over time, youth experience a sort of relationship learning curve with age, in which they gained increased capacity to sustain a relationship, reduce conflict, and choose more compatible partners (Giordano et al. 2012). Our findings support this notion in that inclusion of romantic relationship factors led to a decrease in the magnitude of the linear age effect for male youth by 97.9 % and by 36.3 % for female youth. Once both sets of risk factors were considered, age coefficients for male youth remained near zero suggesting that our models had effectively explained nearly all of the age variation in IPV perpetration for adolescent boys and young men. Thus, as previously noted, further work is needed to identify additional factors associated with age-related patterns of IPV perpetration for adolescent girls and young women.

While we contribute to research on IPV, the current study is not without limitations. We did not distinguish between perpetrator only and bidirectional violence groups. Examination of the distribution of gender across these two groups revealed that the perpetrator only group was overwhelmingly female (90 %). Accordingly, the lack of male respondents in the perpetrator only group precluded us from being able to conduct a gendered analysis by group. Given that consideration of gendered pathways was a central focus of the current study, we chose to pool respondents combining perpetration only and bidirectional violence reports for our analyses into a report of any perpetration experience. Additionally, we do not differentiate between same-sex and different-sex relationships due to the small number of respondents reporting on a same-sex relationship. As previously noted, another potential limitation was our reliance on self-reported data. While critics of self-reported data from school-based samples often express concern over not including those most likely to engage in risky behaviors (Wills and Cleary 1997), an asset of the TARS is that respondents did not have to be in school to participate. Furthermore, as our attrition analyses indicated, IPV perpetration and general antisocial behavior was not associated with participation rates, while alcohol and substance use was actually *higher* among those retained in the sample. A further concern of self-reported data is a social desirability bias. However, official records such as hospital records, and arrest data are subject to their own biases and comparisons of self-reports of problematic behaviors and official records have found a high degree of concurrent validity (Maxfield et al. 2000). Nevertheless, future studies should concentrate on developing and using multiple sources of information including self-reports, partner reports, and official records (legal and medical). Additionally, the current study does not consider how patterns of change may vary based on prior victimization patterns. Prior work has highlighted that adolescent girls and women who experience early physical and sexual victimization are at greater risk for IPV involvement (Foshee et al. 2004; Whitfield et al. 2003). Accordingly, there is a need to understand how victimization experiences in other contexts (e.g., family, peers) influence patterns of IPV involvement in romantic relationships across the span of adolescence and young adulthood.

The gender gap in IPV perpetration, as well as the differential findings by gender for the influence of behavioral and psychological risk factors in accounting for the age variation of IPV perpetration highlights the need for ongoing consideration of gendered pathways. Further, much of the age variation among women remains unexplained indicating the need for empirical and theoretical work that directly addresses gender. It should be noted, however, that gender did not interact with any of the time-varying variables. Similar to other work, which finds that the etiological mechanisms relating to antisocial behavior operate similarly across gender (Fagan et al. 2007; Miller et al. 2010; Moffit et al. 2001), we find no evidence to suggest that risk factors associated with IPV exert

differential effects for men and women. This does not mean, however, that gender-specific theories are not needed, only that the emphasis should be placed on issues surrounding prevalence, rather than etiology. For example, our finding that general antisocial behavior did little to explain age-related variations in IPV among women is understandable given that relative to their male peers, few young women are engaged in delinquent-based behaviors. Thus, in order to understand age-related patterns of IPV we must focus attention on phenomena that are more likely to reflect shared experiences of young women as they navigate the transition from adolescence to young adulthood. This presents itself as an opportunity for future theory-building as it relates to developmental patterns of IPV.

A key asset of this article is the focus on relational processes, which are associated with IPV perpetration. We find that one process, frequency of disagreements, varies as adolescents transition into young adulthood. It seems reasonable that frequency of disagreements would follow a similar pattern to the overall age–IPV perpetration curve, and one might wonder whether frequency of disagreements and IPV perpetration are simply capturing the same overall trend of relationship conflict over time. While this may be the case, there are two considerations to keep in mind. First, while IPV perpetrators do report higher frequencies of disagreements relative to non-perpetrators, frequency of disagreements among non-perpetrators displayed a high degree of variability and frequent disagreements does not always equate to violence in the relationship. Second, the frequency of disagreements and age interactions reflects changes in the *association* between disagreements and IPV perpetration, not the absolute values of frequency of disagreements. This suggests that it is important to attend to not only changes in risk factors across adolescence into young adulthood, but also changes in the strength of their association with IPV over the life course. An advantage of this research strategy is the ability to trace change in adolescents as they transition into adulthood and additional work on this is warranted to provide a better understanding of the processes underlying IPV perpetration.

Conclusion

Our work shows what is implied in prior studies; the predicted probability of IPV perpetration increases during adolescence, reaches its peak in the early twenties, and subsequently declines during the latter half of the twenties. Research emerging during the past two decades has revealed a high degree of heterogeneity among those perpetrating IPV, leading to the development of typologies of IPV (e.g., Holtzworth-Munroe and Stuart 1994; Johnson 1995). Recent longitudinal analyses of IPV have sought to further showcase this diversity between individuals, or groups of individuals from one another as it relates to patterns across adolescence and young adulthood (e.g., Swartout et al. 2012). Such group-based trajectory analyses have their merits; however, they suggest that once a trajectory is established, individuals are not likely to deviate off-course. Similarly, taxonomic approaches to IPV perpetration have posited that group membership will remain largely stable over the life course (e.g., Cavanaugh and Gelles 2005), or follow a predestined path based on earlier experiences in adolescence (e.g., Ehrensaft et al. 2004). Our research moved beyond these more static portraits, recognizing that as youth transition from adolescence to adulthood, there are opportunities for change. As noted by Sampson and Laub (2005:42) trajectories (or growth curves) are "being continually socially produced over time". With respect to IPV, changes may reflect vagaries in other risk behaviors that alter risk profiles, or increases in stressors that translate to increased risk of perpetrating IPV. Specifically, researchers must take into account the relational nature of individual and context (Lerner 2004) and how this relates to agentic choices on the part of the individual, such as partner selection (O'Leary and Slep 2012). Yet, to date, relatively few studies have considered changes in IPV perpetration across relationship contexts. This is an important next step given the considerable turnover in romantic partners during young adulthood (Arnett 2004) when, as indicated by our results, risk is at its peak. Additionally, the ability of factors associated with the relationship context to explain more of the age variation in partner violence perpetration reinforces recent calls for prevention efforts that focus on the development of healthy relationships in adolescence and young adulthood (Capaldi and Kim 2007; Pepler 2012). Thus, more work is needed that uses longitudinal data and includes not only developmental changes, but changes in the romantic context as well. Specifically, in addition to relationship qualities, dyadic patterns of interaction that include the partner need to be considered (Pepler 2012). Such efforts have the potential to yield much information with respect to how risk profiles develop and change over time in patterns of IPV.

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Author contributions WLJ conceived of the study and its design, performed the statistical analyses, and drafted the manuscript. PCG, WDM, and MAL participated in the interpretation of the data and the finalization of the manuscript, in addition to their role as primary investigators of the TARS study which produced the data used for the current investigation. All authors read and approved the final manuscript.

References

Allison, P. D. (2005). *Fixed effects regression methods for longitudinal data using SAS*. Cary, NC: SAS Institute.

Alvira-Hammond, M., Longmore, M. A., Manning, W. D., & Giordano, P. C. (2014). Gainful activity and intimate partner aggression in emerging adulthood. *Emerging Adulthood, 2*(2), 116–127.

Amato, P. R., & Booth, A. (2001). The legacy of parents' marital discord: Consequences for children's marital quality. *Journal of Personality and Social Psychology, 81*(4), 627–638.

Amato, P. R., Johnson, D. R., Booth, A., & Rogers, S. J. (2003). Continuity and change in marital quality between 1980 and 2000. *Journal of Marriage and Family, 65*(1), 1–22.

Anderson, K. L. (2013). Why do we fail to ask "why" about gender and intimate partner violence? *Journal of Marriage and Family, 75*(2), 314–318.

Archer, J. (2000). Sex differences in aggression between heterosexual partners: A meta-analytic review. *Psychological Bulletin, 126*(5), 651.

Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. Oxford: Oxford University Press.

Berenbaum, S. A., Martin, C. L., & Ruble, D. N. (2008). Gender development. In W. Damon & R. Lerner (Eds.), *Advanced child and adolescent development* (pp. 647–696). New York: Wiley.

Brown, S. L., & Bulanda, J. R. (2008). Relationship violence in young adulthood: A comparison of daters, cohabitors, and marrieds. *Social Science Research, 37*(1), 73–87.

Burgess-Proctor, A. (2006). Intersections of race, class, gender, and crime future directions for feminist criminology. *Feminist Criminology, 1*(1), 27–47.

Caetano, R., Vaeth, P. A., & Ramisetty-Mikler, S. (2008). Intimate partner violence victim and perpetrator characteristics among couples in the United States. *Journal of Family Violence, 23*(6), 507–518.

Capaldi, D. M., & Kim, H. K. (2007). Typological approaches to violence in couples: A critique and alternative conceptual approach. *Clinical Psychology Review, 27*(3), 253–265.

Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A systematic review of risk factors for intimate partner violence. *Partner Abuse, 3*(2), 231–280.

Carbone-Lopez, K., Rennison, C. M., & Macmillan, R. (2012). The transcendence of violence across relationships: New methods for understanding men's and women's experiences of intimate partner violence across the life course. *Journal of Quantitative Criminology, 28*(2), 319–346.

Carney, M., Buttell, F., & Dutton, D. (2007). Women who perpetrate intimate partner violence: A review of the literature with recommendations for treatment. *Aggression and Violent Behavior, 12*(1), 108–115.

Cavanaugh, M. M., & Gelles, R. J. (2005). The utility of male domestic violence offender typologies new directions for research, policy, and practice. *Journal of Interpersonal Violence, 20*(2), 155–166.

Cernkovich, S. A., & Giordano, P. C. (2001). Stability and change in antisocial behavior: The transition from adolescence to early adulthood. *Criminology, 39*(2), 371–410.

Chassin, L., Flora, D. B., & King, K. M. (2004). Trajectories of alcohol and drug use and dependence from adolescence to adulthood: The effects of familial alcoholism and personality. *Journal of Abnormal Psychology, 113*(4), 483.

Coker, A. L., Smith, P. H., Bethea, L., King, M. R., & McKeown, R. E. (2000). Physical health consequences of physical and psychological intimate partner violence. *Archives of Family Medicine, 9*(5), 451–457.

Conger, R. D., Conger, K. J., Elder, G. H., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1993). Family economic stress and adjustment of early adolescent girls. *Developmental Psychology, 29*(2), 206.

Connolly, J., Craig, W., Goldberg, A., & Pepler, D. (2004). Mixed-gender groups, dating, and romantic relationships in early adolescence. *Journal of Research on Adolescence, 14*(2), 185–207.

Connolly, J., & McIsaac, C. M. (2009). Romantic relationships in adolescence. In R. M. Lerner & L. M. Steinberg (Eds.), *Handbook of adolescent psychology* (3rd ed. ed., pp. 104–151). New York: Wiley.

Crick, N. R., Ostrov, J. M., & Werner, N. E. (2006). A longitudinal study of relational aggression, physical aggression, and children's social–psychological adjustment. *Journal of Abnormal Child Psychology, 34*(2), 127–138.

Cui, M., Ueno, K., Gordon, M., & Fincham, F. D. (2013). The continuation of intimate partner violence from adolescence to young adulthood. *Journal of Marriage and Family, 75*(2), 300–313.

Cunradi, C. B., Caetano, R., & Schafer, J. (2002). Socioeconomic predictors of intimate partner violence among White, Black, and Hispanic couples in the United States. *Journal of Family Violence, 17*(4), 377–389.

Dailey, R. M., Pfiester, A., Jin, B., Beck, G., & Clark, G. (2009). On-again/off-again dating relationships: How are they different from other dating relationships? *Personal Relationships, 16*(1), 23–47.

Daly, K. (1998). Gender, crime, and criminology. In M. Tonry (Ed.), *The handbook of crime and punishment* (pp. 85–108). Oxford: Oxford University Press.

DeMaris, A., Benson, M. L., Fox, G. L., Hill, T., & Van Wyk, J. (2003). Distal and proximal factors in domestic violence: A test of an integrated model. *Journal of Marriage and Family, 65*(3), 652–667.

Douglas, E. M., & Straus, M. A. (2006). Assault and injury of dating partners by university students in 19 countries and its relation to corporal punishment experienced as a child. *European Journal of Criminology, 3*(3), 293–318.

Ehrensaft, M. K., Moffitt, T. E., & Caspi, A. (2004). Clinically abusive relationships in an unselected birth cohort: Men's and women's participation and developmental antecedents. *Journal of Abnormal Psychology, 113*(2), 258.

Elliott, D. S., & Ageton, S. S. (1980). Reconciling race and class differences in self-reported and official estimates of delinquency. *American Sociological Review, 45*(1), 95–110.

Fagan, J., & Browne, A. (1994). Violence between spouses and intimates: Physical aggression between women and men in intimate relationships. In A. J. Reiss & J. A. Roth (Eds.), *Understanding and preventing violence: Social influences* (Vol. 3, pp. 115–292). Washington, DC: National Academy Press.

Fagan, A. A., Van Horn, M. L., Hawkins, J. D., & Arthur, M. W. (2007). Gender similarities and differences in the association between risk and protective factors and self-reported serious delinquency. *Prevention Science, 8*(2), 115–124.

Fang, X., & Corso, P. S. (2008). Gender differences in the connections between violence experienced as a child and perpetration of intimate partner violence in young adulthood. *Journal of Family Violence, 23*(5), 303–313.

Felson, R. B. (2006). Is violence against women about women or about violence? *Contexts, 5*(2), 21–25.

Felson, R. B., & Lane, K. J. (2010). Does violence involving women and intimate partners have a special etiology? *Criminology, 48*(1), 321–338.

Felson, R. B., & Messner, S. F. (1998). Disentangling the effects of gender and intimacy on victim precipitation in homicide. *Criminology, 36*(2), 405–424.

Flanzer, J. (2005). The status of health services research on adjudicated drug-abusing# juveniles: Selected findings and remaining questions. *Substance Use and Misuse, 40*(7), 887–911.

Foshee, V. A., Benefield, T. S., Ennett, S. T., Bauman, K. E., & Suchindran, C. (2004). Longitudinal predictors of serious physical and sexual dating violence victimization during adolescence. *Preventive Medicine, 39*(5), 1007–1016.

Furman, W., & Shaffer, L. (2003). The role of romantic relationships in adolescent development. In P. Flosheim (Ed.), *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications* (pp. 3–22). Mahwah, NJ: Erlbaum.

Furman, W., & Wehner, E. A. (1997). Adolescent romantic relationships: A developmental perspective. *New Directions for Child and Adolescent Development, 78*, 21–36.

Ge, X., Lorenz, F. O., Conger, R. D., Elder, G. H., & Simons, R. L. (1994). Trajectories of stressful life events and depressive symptoms during adolescence. *Developmental Psychology, 30*(4), 467.

Gilligan, C. (1982). *In a different voice*. Harvard: Harvard University Press.

Giordano, P. C., Manning, W. D., Longmore, M. A., & Flanigan, C. M. (2012). Developmental shifts in the character of romantic and sexual relationships from adolescence to young adulthood. In A. Booth, S. L. Brown, N. S. Landale, W. D. Manning, & S. McHale (Eds.), *Early adulthood in a family context* (pp. 133–164). New York, NY: Springer.

Giordano, P. C., Soto, D. A., Manning, W. D., & Longmore, M. A. (2010). The characteristics of romantic relationships associated with teen dating violence. *Social Science Research, 39*(6), 863–874.

Gómez, A. M. (2011). Testing the cycle of violence hypothesis: Child abuse and adolescent dating violence as predictors of intimate partner violence in young adulthood. *Youth & Society, 43*(1), 171–192.

Gottfredson, M. R., & Travis, H. (1990). *A general theory of crime*. Palo Alto, CA: Stanford University Press.

Halpern, C. T., Spriggs, A. L., Martin, S. L., & Kupper, L. L. (2009). Patterns of intimate partner violence victimization from adolescence to young adulthood in a nationally representative sample. *Journal of Adolescent Health, 45*(5), 508–516.

Halpern-Meekin, S., Manning, W. D., Giordano, P. C., & Longmore, M. A. (2013). Relationship churning, physical violence, and verbal abuse in young adult relationships. *Journal of Marriage and Family, 75*(1), 2–12.

Hamby, S., Finkelhor, D., & Turner, H. (2012). Teen dating violence: Co-occurrence with other victimizations in the National Survey of Children's Exposure to Violence (NatSCEV). *Psychology of Violence, 2*(2), 111.

Hester, M. (2013). Who does what to whom? Gender and domestic violence perpetrators in English police records. *European Journal of Criminology, 10*(5), 623–637.

Hirschi, T., & Gottfredson, M. (1983). Age and the explanation of crime. *American Journal of Sociology, 89*(3), 552–584.

Holtzworth-Munroe, A., & Stuart, G. L. (1994). Typologies of male batterers: Three subtypes and the differences among them. *Psychological Bulletin, 116*(3), 476–497.

Horney, J., Osgood, D. W., & Marshall, I. H. (1995). Criminal careers in the short-term: Intra-individual variability in crime and its relation to local life circumstances. *American Sociological Review, 60*(5), 655–673.

Johnson, M. P. (1995). Patriarchal terrorism and common couple violence: Two forms of violence against women. *Journal of Marriage and the Family, 57*(2), 283–294.

Johnson, M. P. (2006). Conflict and control gender symmetry and asymmetry in domestic violence. *Violence Against Women, 12*(11), 1003–1018.

Johnson, W. L., Giordano, P. C., Longmore, M. A., & Manning, W. D. (2014). The influence of intimate partner violence on trajectories of depressive symptoms from adolescence to young adulthood. *Journal of Health and Social Behavior, 55*(1), 39–55.

Jouriles, E. N., McDonald, R., Mueller, V., & Grych, J. H. (2012). Youth experiences of family violence and teen dating violence perpetration: Cognitive and emotional mediators. *Clinical Child and Family Psychology Review, 15*(1), 58–68.

Joyner, K., & Udry, J. R. (2000). You don't bring me anything but down: Adolescent romance and depression. *Journal of Health and Social Behavior, 41*(4), 369–391.

Kim, H. K., & Capaldi, D. M. (2004). The association of antisocial behavior and depressive symptoms between partners and risk for aggression in romantic relationships. *Journal of Family Psychology, 18*(1), 82.

Laub, J. H., & Sampson, R. J. (2003). *Shared beginnings, divergent lives: Delinquent boys to age 70*. Cambridge, MA: Harvard University Press.

Laursen, B., & Hafen, C. A. (2010). Future directions in the study of close relationships: Conflict is bad (except when it's not). *Social Development, 19*(4), 858–872.

Leonard, K. E. (1993). Drinking patterns and intoxication in marital violence: Review, critique, and future directions for research. *Alcohol and Interpersonal Violence: Fostering Multidisciplinary Perspectives, 24*, 253–280.

Lerner, R. M. (2004). Diversity in individual ↔ context relations as the basis for positive development across the life span: A developmental systems perspective for theory, research, and application (The 2004 Society for the Study of Human Development Presidential Address). *Research in Human Development, 1*(4), 327–346.

Linder, J. R., Crick, N. R., & Collins, W. A. (2002). Relational aggression and victimization in young adults' romantic relationships: Associations with perceptions of parent, peer, and romantic relationship quality. *Social Development, 11*(1), 69–86.

Lussier, P., Farrington, D. P., & Moffitt, T. E. (2009). Is the antisocial child father of the abusive man? A 40-year prospective longitudinal study on the developmental antecedents of intimate partner violence. *Criminology, 47*(3), 741–780.

Maas, C. D., Fleming, C. B., Herrenkohl, T. I., & Catalano, R. F. (2010). Childhood predictors of teen dating violence victimization. *Violence and Victims, 25*(2), 131.

Magdol, L., Moffitt, T. E., Caspi, A., Newman, D. L., Fagan, J., & Silva, P. A. (1997). Gender differences in partner violence in a birth cohort of 21-year-olds: Bridging the gap between clinical and epidemiological approaches. *Journal of Consulting and Clinical Psychology, 65*(1), 68.

Massoglia, M., & Uggen, C. (2010). Settling down and aging out: Toward an interactionist theory of desistance and the transition to adulthood. *American Journal of Sociology, 116*(2), 543–582.

Maxfield, M. G., Weiler, B. L., & Widom, C. S. (2000). Comparing self-reports and official records of arrests. *Journal of Quantitative Criminology, 16*(1), 87–110.

Meadows, S. O., Brown, J. S., & Elder, G. H, Jr. (2006). Depressive symptoms, stress, and support: Gendered trajectories from adolescence to young adulthood. *Journal of Youth and Adolescence, 35*(1), 89–99.

Meier, A., & Allen, G. (2009). Romantic relationships from adolescence to young adulthood: Evidence from the National Longitudinal Study of Adolescent Health. *The Sociological Quarterly, 50*(2), 308–335.

Melander, L. A., Noel, H., & Tyler, K. A. (2010). Bidirectional, unidirectional, and nonviolence: A comparison of the predictors among partnered young adults. *Violence and Victims, 25*(5), 617–630.

Messerschmidt, J. W. (1993). *Masculinities and crime: Critique and reconceptualization of theory*. Lanham, MD: Rowman & Littlefield.

Miller, J. (2008). *Getting played: African American girls, urban inequality, and gendered violence*. New York, NY: New York University Press.

Miller, S., Malone, P. S., & Dodge, K. A. (2010). Developmental trajectories of boys' and girls' delinquency: Sex differences and links to later adolescent outcomes. *Journal of Abnormal Child Psychology, 38*(7), 1021–1032.

Miller, J., & White, N. A. (2003). Gender and adolescent relationship violence: A contextual examination. *Criminology, 41*(4), 1207–1248.

Moffit, T. E., Caspi, A., Rutter, M., & Silva, P. A. (2001). *Sex differences in antisocial behavior*. Cambridge: Cambridge University Press.

National Vital Statistics System. (2013). Births: Final data for 2012. *National Vital Statistics Reports, 62(9)*. http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_09.pdf#table01.

O'Keefe, M. (1997). Predictors of dating violence among high school students. *Journal of Interpersonal Violence, 12*(4), 546–568.

O'Leary, K. D., & Slep, A. M. S. (2012). Prevention of partner violence by focusing on behaviors of both young males and females. *Prevention Science, 13*(4), 329–339.

O'Leary, K. D. (1999). Developmental and affective issues in assessing and treating partner aggression. *Clinical Psychology: Science and Practice, 6*(4), 400–414.

O'Leary, K. D., Barling, J., Arias, I., Rosenbaum, A., Malone, J., & Tyree, A. (1989). Prevalence and stability of physical aggression between spouses: A longitudinal analysis. *Journal of Consulting and Clinical Psychology, 57*(2), 263.

Osgood, D. W. (2005). Making sense of crime and the life course. *The Annals of the American Academy of Political and Social Science, 602*(1), 196–211.

Owens, L., Shute, R., & Slee, P. (2000). I'm in and you're out. *Psychology, Evolution & Gender, 2*(1), 19–46.

Palmetto, N., Davidson, L. L., Breitbart, V., & Rickert, V. I. (2013). Predictors of physical intimate partner violence in the lives of young women: Victimization, perpetration, and bidirectional violence. *Violence and Victims, 28*(1), 103–121.

Park, S., Morash, M., & Stevens, T. (2010). Gender differences in predictors of assaultive behavior in late adolescence. *Youth Violence and Juvenile Justice, 8*(4), 314–331.

Pepler, D. (2012). The development of dating violence: What doesn't develop, what does develop, how does it develop, and what can we do about it? *Prevention Science, 13*(4), 1–8.

Quigley, B. M., & Leonard, K. E. (2000). Alcohol and the continuation of early marital aggression. *Alcoholism, Clinical and Experimental Research, 24*(7), 1003–1010.

Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385–401.

Raley, R. K., Crissey, S., & Muller, C. (2007). Of sex and romance: Late adolescent relationships and young adult union formation. *Journal of Marriage and Family, 69*(5), 1210–1226.

Renner, L. M., & Whitney, S. D. (2012). Risk factors for unidirectional and bidirectional intimate partner violence among young adults. *Child Abuse and Neglect, 36*(1), 40–52.

Rhoades, G. K., Stanley, S. M., Kelmer, G., & Markman, H. J. (2010). Physical aggression in unmarried relationships: The roles of commitment and constraints. *Journal of Family Psychology, 24*(6), 678–687.

Rose, A. J., Swenson, L. P., & Waller, E. M. (2004). Overt and relational aggression and perceived popularity: Developmental differences in concurrent and prospective relations. *Developmental Psychology, 40*(3), 378–387.

Saltzman, L. E., Fanslow, J. L., McMahon, P. M., & Shelley, G. A. (2002). *Intimate partner violence surveillance: Uniform definitions and recommended data elements, version 1.0*. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Sampson, R. J., & Laub, J. H. (2005). A life-course view of the development of crime. *The Annals of the American Academy of Political and Social Science, 602*(1), 12–45.

Shortt, J. W., Capaldi, D. M., Kim, H. K., Kerr, D. C., Owen, L. D., & Feingold, A. (2012). Stability of intimate partner violence by men across 12 years in young adulthood: Effects of relationship transitions. *Prevention Science, 13*(4), 360–369.

Siennick, S., & Osgood, D. W. (2008). A review of research on the impact on crime of transitions to adult roles. In A. Liberman (Ed.), *The long view of crime: A synthesis of longitudinal research* (pp. 161–187). New York: Springer.

Simon, L. M., Ellwanger, S. J., & Haggerty, J. (2010). Reversing the historical tide of iatrogenic harm: A therapeutic jurisprudence analysis of increases in arrests of domestic batterers and rapists. *International Journal of Law and Psychiatry, 33*(5), 306–320.

Simons, L. G., Burt, C. H., & Simons, R. L. (2008). A test of explanations for the effect of harsh parenting on the perpetration of dating violence and sexual coercion among college males. *Violence and Victims, 23*(1), 66–82.

Simons, R. L., Lin, K. H., & Gordon, L. C. (1998). Socialization in the family of origin and male dating violence: A prospective study. *Journal of Marriage and the Family, 60*(2), 467–478.

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford University Press.

Sprecher, S., & Hendrick, S. S. (2004). Self-disclosure in intimate relationships: Associations with individual and relationship characteristics over time. *Journal of Social and Clinical Psychology, 23*(6), 857–877.

Stanley, S. M., & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and the Family, 54*(3), 595–608.

Steffensmeier, D., Schwartz, J., Zhong, H., & Ackerman, J. (2005). An assessment of recent trends in girls' violence using diverse longitudinal sources: Is the gender gap closing? *Criminology, 43*(2), 355–406.

Steffensmeier, D., & Streifel, C. (1991). Age, gender, and crime across three historical periods: 1935, 1960, and 1985. *Social Forces, 69*(3), 869–894.

Straus, M. A. (1979). Measuring intrafamily conflict and violence: The conflict tactics (CT) scales. *Journal of Marriage and the Family, 40*(1), 75–88.

Swahn, M. H., Alemdar, M., & Whitaker, D. J. (2010). Nonreciprocal and reciprocal dating violence and injury occurrence among urban youth. *Western Journal of Emergency Medicine, 11*(3), 264–268.

Swartout, K. M., Cook, S. L., & White, J. W. (2012). Trajectories of intimate partner violence victimization. *Western Journal of Emergency Medicine, 13*(3), 272–277.

Sweeten, G., Piquero, A. R., & Steinberg, L. (2013). Age and the explanation of crime, revisited. *Journal of Youth and Adolescence, 42*(6), 921–938.

Teten, A. L., Ball, B., Valle, L. A., Noonan, R., & Rosenbluth, B. (2009). Considerations for the definition, measurement, consequences, and prevention of dating violence victimization among adolescent girls. *Journal of Women's Health, 18*(7), 923–927.

Tittle, C. R., Ward, D. A., & Grasmick, H. G. (2003). Gender, age, and crime/deviance: A challenge to self-control theory. *Journal of Research in Crime and Delinquency, 40*(4), 426–453.

Walker, L. A. (1984). Battered women, psychology, and public policy. *American Psychologist, 39*(10), 1178–1182.

Warner, T. D. (2010). Violent acts and injurious consequences: An examination of competing hypotheses about intimate partner violence using agency-based data. *Journal of family violence, 25*(2), 183–193.

Whitaker, D. J., Haileyesus, T., Swahn, M., & Saltzman, L. S. (2007). Differences in frequency of violence and reported injury between relationships with reciprocal and nonreciprocal intimate partner violence. *American Journal of Public Health, 97*(5), 941–947.

Whitaker, D. J., Le, B., & Niolon, P. H. (2010). Persistence and desistance of the perpetration of physical aggression across relationships findings from a national study of adolescents. *Journal of Interpersonal Violence, 25*(4), 591–609.

White, H. R., & Chen, P. H. (2002). Problem drinking and intimate partner violence. *Journal of Studies on Alcohol and Drugs, 63*(2), 205.

Whitfield, C. L., Anda, R. F., Dube, S. R., & Felitti, V. J. (2003). Violent childhood experiences and the risk of intimate partner violence in adults: Assessment in a large health maintenance organization. *Journal of Interpersonal Violence, 18*(2), 166–185.

Wickrama, K. A. S., Conger, R. D., Lorenz, F. O., & Jung, T. (2008). Family antecedents and consequences of trajectories of depressive symptoms from adolescence to young adulthood: A life course investigation. *Journal of Health and Social Behavior, 49*(4), 468–483.

Willett, J. B., Singer, J. S., & Martin, N. C. (1998). The design and analysis of longitudinal studies of development and psychopathology in context: Statistical models and methodological recommendations. *Developmental Psychopathology, 10*, 395–426.

Wills, T. A., & Cleary, S. D. (1997). The validity of self-reports of smoking: Analyses by race/ethnicity in a school sample of urban adolescents. *American Journal of Public Health, 87*(1), 56–61.

Zimmerman, G. M., & Messner, S. F. (2010). Neighborhood context and the gender gap in adolescent violent crime. *American Sociological Review, 75*(6), 958–980.

Zweig, M. (2004). *What's class got to do with it? American society in the twenty-first century*. Ithaca, NY: Cornell University Press.

Wendi L. Johnson is an assistant professor of criminal justice at Oakland University. Her research examines longitudinal patterns and change in antisocial behavior and intimate partner violence (IPV) across adolescence and young adulthood. Past work has examined the influence of parents on their offspring's offending in adulthood.

Peggy C. Giordano is a distinguished research professor of sociology at Bowling Green State University. Her research centers on basic social network processes, including friendships and dating relationships, and the ways in which these influence a variety of developmental outcomes, especially adolescent sexual behavior and delinquency involvement.

Wendy D. Manning is a distinguished research professor of sociology at Bowling Green State University, director of the Center for Family and Demographic Research, and co-director of the National Center for Family and Marriage Research. Her research focuses on relationships that exist outside the boundaries of marriage, including cohabitation, adolescent dating, and nonresident parenting.

Monica A. Longmore is a professor of sociology at Bowling Green State University. Her interests include social psychological processes, including the nature and consequences of dimensions of the self-concept, especially the impact of self-conceptions on adolescent dating and sexual behavior.